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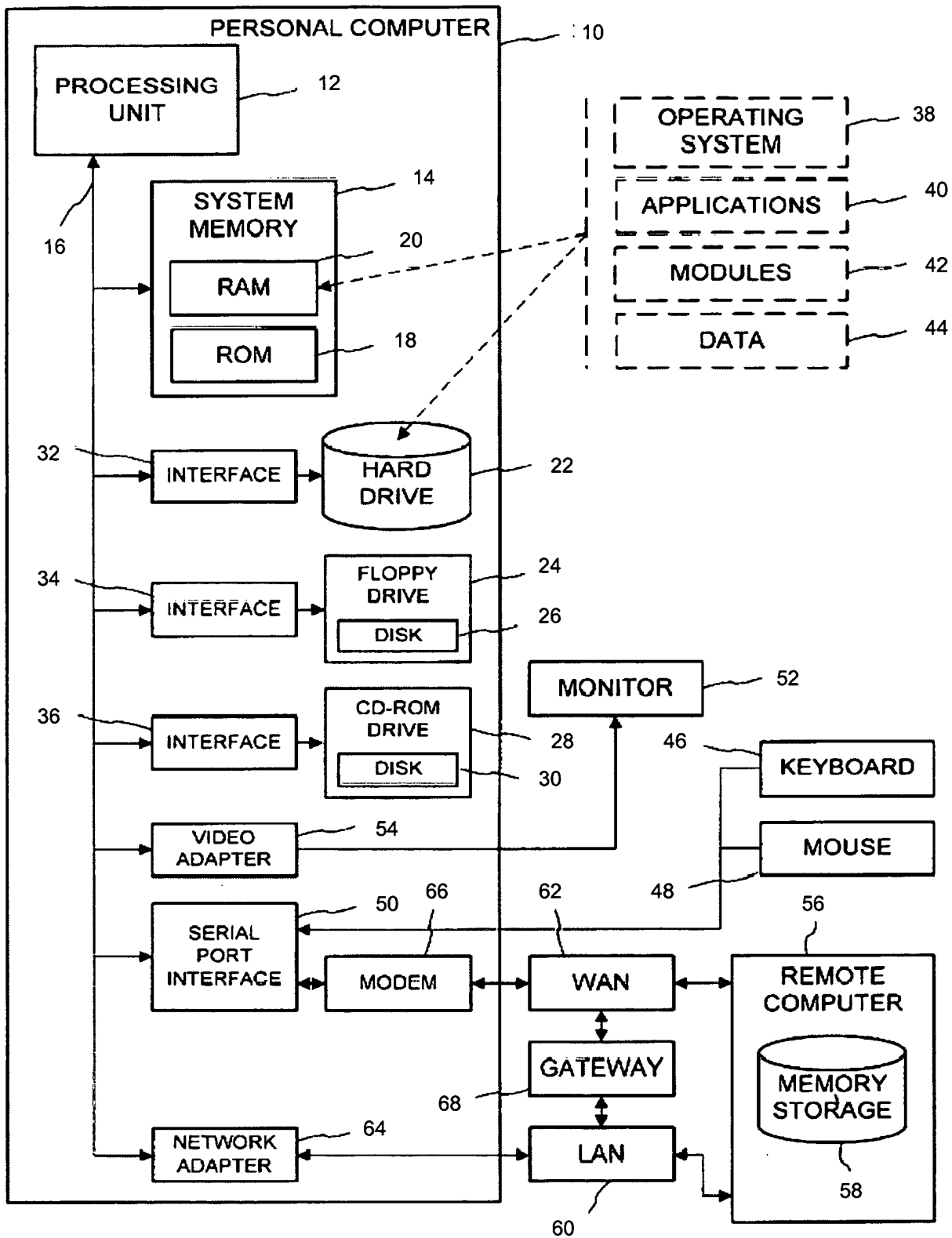
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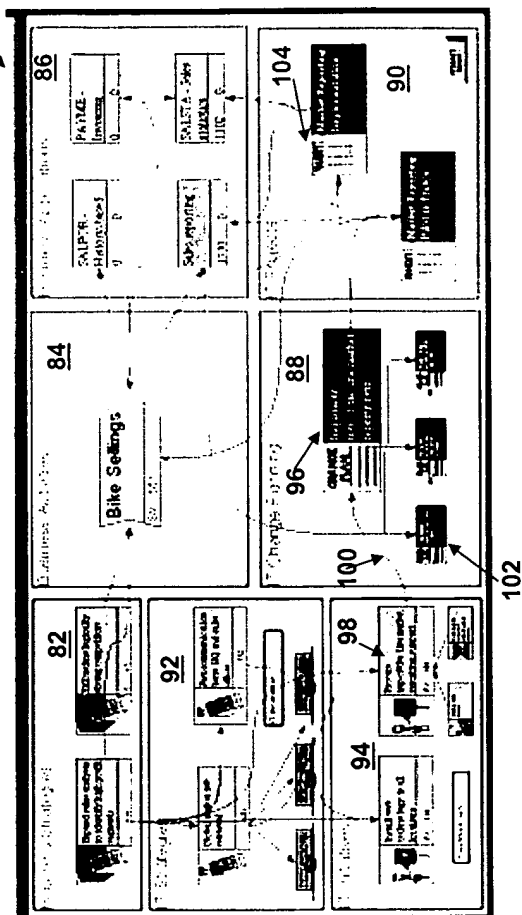
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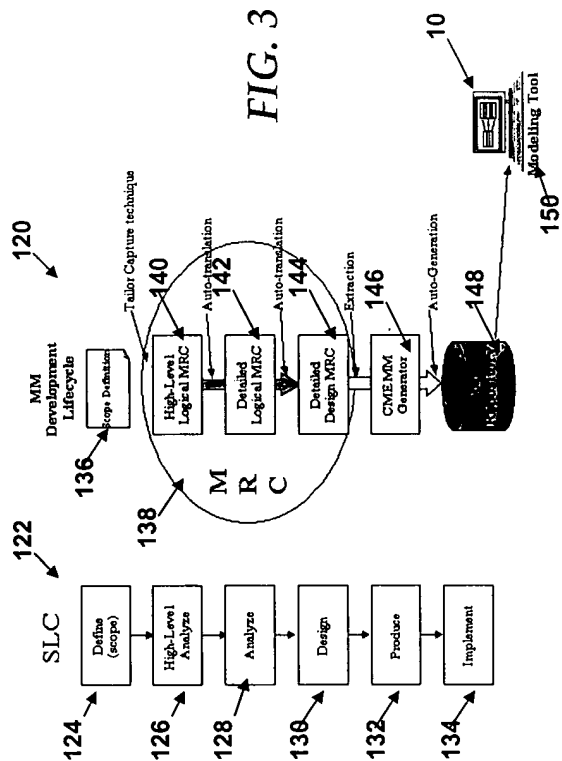
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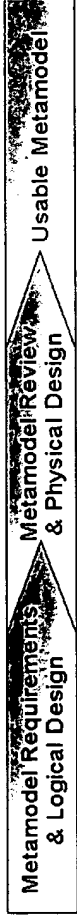
FIG. 1





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Metamodel Requirements Capture (UML) Model

1	Name	G	H	Description
31	Process Category	Level 0 - the h		
32	Process Flow	In the hierarch		
33	Process Group	Level 2 - in the		
34	Process Scenario	Level 1 - in the		
35	Product Assembly	A Product Ass		
36	Reference Architecture	A Reference A		

Parse out, import in

138

152

FIG. 4

metamodel files from specification spreadsheet

146



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1	Name	G	H	Description
31	Process Category	Level 0 - the h		
32	Process Flow	In the hierarch		
33	Process Group	Level 2 - in the		
34	Process Scenario	Level 1 - in the		
35	Product Assembly	A Product Ass		
36	Reference Architecture	A Reference A		

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Object Type XML  
Relationship Type  
XML Generator  
(Excel spreadsheets  
& VBA macros)

156

Auto, batch

148

Auto, batch

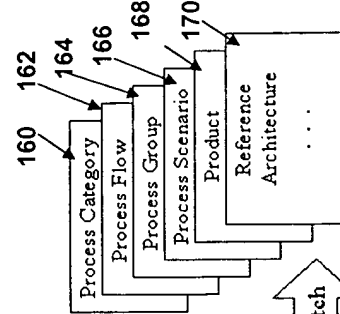
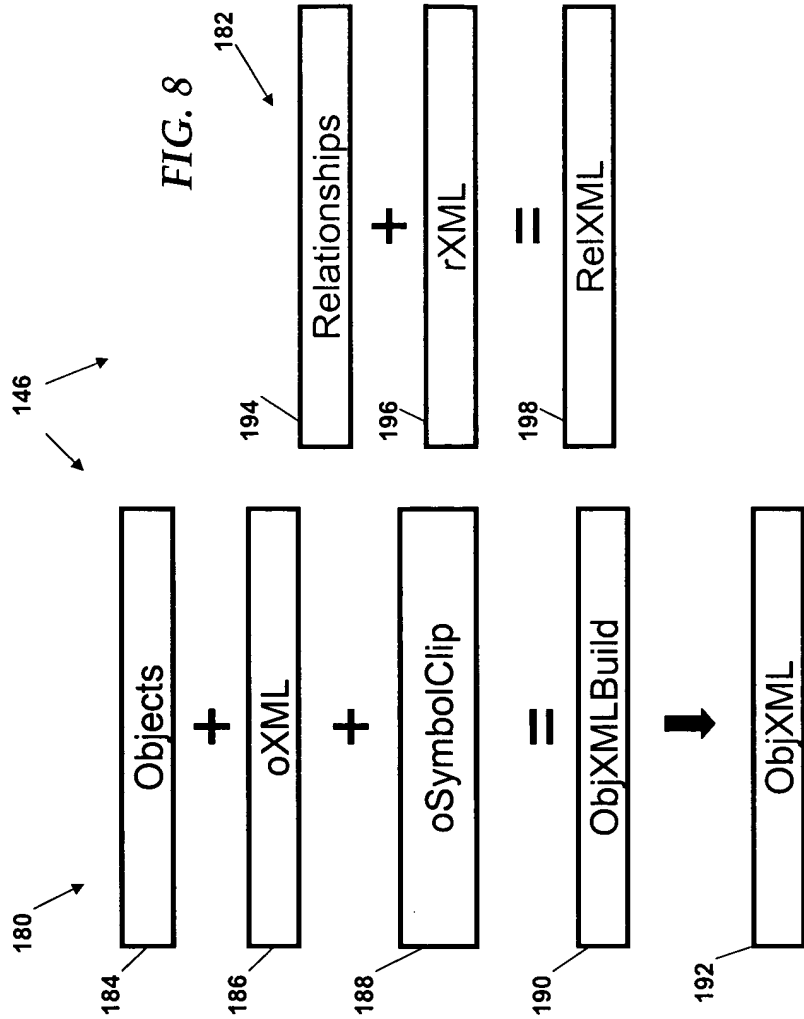
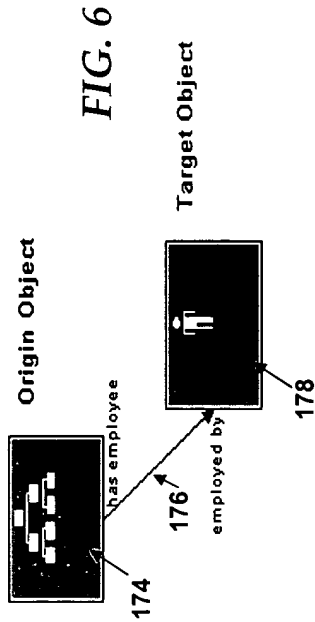


FIG. 5



**FIG. 7**

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FIG. 9

200	202	204	206	208	210	212	214	216	218	220	222	224	226	228	230	232	234
<u>Name</u>	<u>Description</u>	<u>Property</u> <u>Name</u>	<u>Type</u>	<u>Property</u> <u>Name</u>	<u>Type</u>	<u>Property</u> <u>Name</u>	<u>Type</u>	<u>Symbol</u> <u>Title</u> <u>Open</u>	<u>Symbol</u> <u>Open</u>	<u>Symbol</u> <u>Title</u> <u>Closed</u>	<u>Symbol</u> <u>Closed</u>	<u>Symbol</u> <u>file</u>	<u>aid</u>	<u>typeview</u> <u>aid</u>	<u>Abstract</u> <u>type</u>	<u>open</u> <u>color</u>	<u>closed</u> <u>color</u>
Application	An Application is a program that performs specific business functions directly for a user or an organization. The "user" of an application is normally a person, but in some areas such as Process Control and Manufacturing Shop Floor Control the application may be driving and responding to a machine. In all cases an application can be considered as executing business rules and directly supporting the business processes of the organization. In the model, Application's may be stacked hierarchically to form sets.	Name	String	Description	Text	Acronym	String	Application Open	1	Application Closed	2	application	1	1	Base object	lightblue	darkblue

FIG. 10A

<div>186</div> <div>236</div> <div>object.&lt;metis&gt;</div>	<div>238</div> <div>object.&lt;type&gt;</div>	<div>240</div> <div>oXML</div> <div>object.&lt;complex-type-link&gt;</div>	<div>242</div> <div>object.&lt;typeview-link&gt;</div>	<div>244</div> <div>object.&lt;part-rule&gt;</div>
<div>           &lt;?xml version="1.0"?&gt;            &lt;?metis version="3.2"?&gt;            &lt;?metisxml version="1.1"?&gt;            &lt;!DOCTYPE metis PUBLIC "-//METIS/METIS XML 1.1/EN" "http://xml.metis.no/metis11.dtd"&gt;            &lt;metis              xmlns="http://www.metis.no/metis"              xmlns:xlink="http://www.w3.org/1999/xlink"              types="1"              nextoid="2"&gt;         </div>	<div>&lt;type id="oid"</div>	<div>           &lt;complex-type-link              xlink:role="type"              xlink:title="Base object with Status URL"              xlink:href=".../abstract_types/objectW StatusURL.kmd#oid1"/&gt;         </div>	<div>           &lt;typeview-link              xlink:role="typeview"              xlink:href=".../typeviews/         </div>	<div>           &lt;part-rule min="0" max="..."              xlink:role="type" xlink:title="         </div>

**FIG. 10B**

object.<property>	object.<valueset>	object.name	object.description	object.status	object.url	object.<valueset item>
<property name="	<valueset vset="default" size="	<string name="name"> </string>	<string name="description"> </string>	<integer name="status">0</integer>	<string name="url"> </string>	<



FIG. 10C

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260	262	264	266	268	270	272	274	276	278	280	282
object.<integer>	object.<date>	typeview.<metis>	typeview.<typeview>	typeview.<symbol-override>	typeview.<symbol-override>	typeview.<property views>	typeview.<property name>	typeview.<property description>	typeview.<property status>	typeview.<property url>	typeview.<property view>
<integer name="	<date name="	<?xml version="1.0"?><?metis version="3.2.1"?><?metisxml version="1.1"?><!DOCTYPE metis PUBLIC "-//METIS DTD"	<typeview id="oid1" xlink:role="type" xlink:title="	<symbol-override state="open" xlink:role="symbol" xlink:title="	<symbol-override state="closed" xlink:role="symbol" xlink:title="	<property views>	<property view name="name" label="Name" visible-flag="true"/>	<property view name="description" label="Description" visible-flag="true"/>	<property view name="status" label="Status" visible-flag="true"/>	<property view name="url" label="URL" visible-flag="true"/>	<property view name="





[illegible]

Notes

354

2

350

348

[illegible]

FIG. 13A

358  
Topic

356

192

[illegible]

**FIG. 13B**

360	362	194	364	366	3668	370
Origin	Relationship	Type Name	Description	From Text	Card	To Text
Application	Application implements Logical Application		Indicates the Application implements some or all of the functions associated with the Logical Application	implements	0..n	is implemented by
Application	Application supports (various target types)		Identifies the Applications needed to support the Business Process, Capability or Process Flow.	supports	0..n	is supported by
Application	Application supports (various target types)		Identifies the Applications needed to support the Business Process, Capability or Process Flow.	supports	0..n	is supported by
Application	Application supports (various target types)		Identifies the Applications needed to support the Business Process, Capability or Process Flow.	supports	0..n	is supported by

FIG. 14A

372	374	194	376	378	380	382	384	386
Card	Target	Multiple Connect Rules	generate what?	old	origin oid	target oid	symbol oid	ReIs
0..n	Logical Application		file	1	1	1	1	
0..n	Business Process	(various target types)	top	1	1	1	1	
0..n	Process Flow	(various target types)	mid	1	1	1	1	
0..n	Capability	(various target types)	end	1	1	1	1	

FIG. 14B

**FIG. 15A**

**FIG. 15A**

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**FIG. 15B**

**FIG. 15B**

generate what?	Relationship Type name	filename	Metis Relationship Type XML
file	Application implements Logical Application	applicationImplementsLogicalApplication	<pre> &lt;?xml version="1.0"?&gt; &lt;?metis version="3.2"?&gt; &lt;?metisxml version="1.1"?&gt; &lt;!DOCTYPE mets PUBLIC "-//METIS-METIS XML 1.1/EN" "http://xml.mets.no/mets11.dtd"&gt; &lt;mets   xmlns="http://www.mets.no/mets"   xmlns:xlink="http://www.w3.org/1999/xlink"   type="1"   type view="1"   nextid="3"&gt;    &lt;type id="oid1" name="applicationImplementsLogicalApplication" title="Application implements Logical Application"     desc="Indicates the Application implements some or all of the functions associated with the Logical Application"     usage="relationship" composition-flag="true"&gt;     &lt;complex-type-link xlinkrole="type" xlinktitle="Relationship with shared from and to texts"       xlink:href="#metis:ctypes#oid111"/&gt;     &lt;connect-rule&gt;       &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#metis:object_types#application.kmp#oid1"         xlink:actuate="use"/&gt;       &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Logical Application"         xlink:href="#metis:object_types#logicalApplication.kmp#oid1" xlink:actuate="use"/&gt;     &lt;connect-rule&gt;       &lt;value-set user="shared" size="2" xlinkrole="type" xlinktitle="Application implements Logical Application" xlink:href="#oid1"         &lt;string name="from" implementation="string"&gt;           &lt;string name="to" is implemented by="string"&gt;             &lt;value-set&gt;               &lt;type&gt;                 &lt;metis&gt; </pre>

FIG. 16A



<div>434</div> <div>top</div>	<div>198</div> <div>436</div> <div>Application supports (various target types)</div>	<div>438</div> <div>applicationSupports(VariousTargetTypes)</div>	<div>440</div> <div> <b>FIG. 16B</b> <pre> &lt;?xml version="1.0"?&gt; &lt;?metis version="3.2"?&gt; &lt;?metisxml version="1.1"?&gt; &lt;!DOCTYPE metis PUBLIC "-//METIS/METIS XML 1.0/EN" "http://xml.mets.no:metis/1.0.dtd"&gt; &lt;metis   xmlns="http://www.mets.no:metis/"   xmlns:xlink="http://www.w3.org/1999/xlink"   type="1"   type-version="1"   nextid="3"&gt;    &lt;type id="oid1" name="ApplicationSupports(VariousTargetTypes)" title="Application supports (various target types)"     desc="Identifies the Applications needed to support the Business Process, Capability or Process Flow." usage="relationship"     decomposition-flag="true"&gt;     &lt;complex-type-link xlinkrole="type" xlinktitle="Relationship with shared from and to axis"       xlink:href="#metis:stypes:oid111"&gt;       &lt;connect-rule&gt;         &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#object_types:application.kmc:oid1"           xlink:actuate="user"/&gt;         &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Business Process"           xlink:href="#object_types:businessProcess.kmc:oid1" xlink:actuate="user"/&gt;       &lt;/connect-rule&gt;     &lt;/complex-type-link&gt;   &lt;/type&gt;    &lt;connect-rule&gt;     &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#object_types:application.kmc:oid1"       xlink:actuate="user"/&gt;     &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Process Flow"       xlink:href="#object_types:processFlow.kmc:oid1" xlink:actuate="user"/&gt;   &lt;/connect-rule&gt;    &lt;connect-rule&gt;     &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#object_types:application.kmc:oid1"       xlink:actuate="user"/&gt;     &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Capability" xlink:href="#object_types:capability.kmc:oid1"       xlink:actuate="user"/&gt;     &lt;connect-rule&gt;       &lt;value-set version="shared" id="oid2" xlinkrole="type" xlinktitle="Application Supports (various target types)"         xlink:href="#oid1"&gt;         &lt;string name="from" is supported by string&gt;           &lt;string name="to" is supported by string&gt;             &lt;value-set&gt;               &lt;type&gt;             &lt;/metis&gt;           &lt;/value-set&gt;         &lt;/string&gt;       &lt;/value-set&gt;     &lt;/connect-rule&gt;   &lt;/type&gt; &lt;/metis&gt; </pre> </div>
<div>mid</div>	<div>Application supports (various target types)</div>	<div>applicationSupports(VariousTargetTypes)</div>	<pre> &lt;connect-rule&gt;   &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#object_types:application.kmc:oid1"     xlink:actuate="user"/&gt;   &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Process Flow"     xlink:href="#object_types:processFlow.kmc:oid1" xlink:actuate="user"/&gt; &lt;/connect-rule&gt; </pre>
<div>end</div>	<div>Application supports (various target types)</div>	<div>applicationSupports(VariousTargetTypes)</div>	<pre> &lt;connect-rule&gt;   &lt;origin-rule min="0" max="1" xlinkrole="type" xlinktitle="Application" xlink:href="#object_types:application.kmc:oid1"     xlink:actuate="user"/&gt;   &lt;target-rule min="0" max="1" xlinkrole="type" xlinktitle="Capability" xlink:href="#object_types:capability.kmc:oid1"     xlink:actuate="user"/&gt;   &lt;connect-rule&gt;     &lt;value-set version="shared" id="oid2" xlinkrole="type" xlinktitle="Application Supports (various target types)"       xlink:href="#oid1"&gt;       &lt;string name="from" is supported by string&gt;         &lt;string name="to" is supported by string&gt;           &lt;value-set&gt;             &lt;type&gt;           &lt;/metis&gt;         &lt;/value-set&gt;       &lt;/string&gt;     &lt;/value-set&gt;   &lt;/connect-rule&gt; &lt;/type&gt; &lt;/metis&gt; </pre>